

9. Environmental Technologies/Pollution Control Equipment

Overview

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	2002 (actual)	2003 (actual)	2004 (estimated)
Total Market Size	400	430	480
Total Local Production	270	275	290
Total Exports	0	0	0
Total Imports	130	155	190
Imports from the U.S.	12	13	15

** The above statistics are in US\$ millions and are unofficial estimates.*

** Based on the total ODA funding of environmental projects underway and in the pipeline, as well as projects undertaken by urban and industrial entities including water resources funds.*

As a result of rapid economic development, population growth, and urbanization, Vietnam faces serious environmental problems. In the year 2005, Vietnam's pollution "hot spots" include solid waste, water and air pollution, of which water pollution and solid waste treatment are the two biggest challenges for the Ministry of Natural Resources and Environment (MONRE). According to MONRE, Vietnam's environmental situation is deteriorating due to a lack of resources to deal with many of these problems.

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Municipal Water Supply

According to Vietnam's Ministry of Construction, only 200 of 689 cities provide clean drinking water through central municipal treatment plants. These potable water treatment plants have an average capacity of 500-3000m³/day. Two-thirds of the potable water derives from surface water and one-third is from underground water.

At the above production rates, only 60 percent of Vietnam's population has access to clean water. Meanwhile, the average rate of clean water leakage in urban areas is 36 percent and reaches 50 percent in some places. In order to improve the situation, the government issued a development plan for the national water supply with the objective of providing clean water for 80 percent of the population by the year 2010. The Vietnam Water Supply and Sewage Association (VWSA) estimates that the total investment for water supply projects will be more than \$2 billion for the next ten years.

Domestic wastewater

Drainage and sewage problems also constitute a growing concern. Vietnam's rapid urbanization and industrialization over the last ten years have placed huge demands on its outdated and run-down sewage systems, most of which were constructed in the 19th century. Most drainage systems

are for combined use, mixing rainwater runoff with untreated domestic wastewater. At present, none of the cities or provinces within the country has a centralized wastewater treatment plant.

Industrial wastewater

Industrial wastewater is also having a major negative impact on the environment. For example, of 15 industrial estates in Ho Chi Minh City only five have central wastewater treatment plants, four are under design and the rest lack the resources to install their own wastewater treatment facilities. This has resulted in the direct discharge of untreated wastewater into the environment. This problem is drawing greater attention from both the government and private sector. City authorities have determined to relocate industrial polluters from the residential areas to regulated zones or industrial parks. To help local businesses with relocation efforts, financial assistance programs have been launched such as the Environmental Revolving Fund and the Development Assistance Fund. This will translate into more pollution control equipment investment in the upcoming years.

Solid waste

Domestic solid waste

Another environmental concern is the mass accumulation of solid waste in the country. According to the Ministry of Natural Resources and Environment, the average generation rate of solid waste is more than 20,000 tons per day throughout the country, of which 6,000 tons alone is generated in Ho Chi Minh City.

Presently, burying domestic solid waste at landfills is the only treatment method used in Vietnam. In Ho Chi Minh City, there are three landfills under operation and another is planned. However, only one of these three landfills has a treatment facility for wastewater leakage. The leachate from the other landfills is causing severe pollution to underground water in the surrounding area.

Hazardous solid waste from factories and hospitals

Except for solid waste from hospitals that is collected and burned in a controlled environment, most industrial waste is still disposed together with domestic waste without proper treatment. Currently, there is no industrial waste management and control system in place in the Vietnam. Contamination from pesticides and agricultural chemical runoff is growing at alarmingly rate. Although the national budget and bilateral aid have been applied to address these problems, much more capital investment is needed.

Air pollution

The government of Vietnam is beginning to more aggressively address air pollution. While the use of leaded gasoline has been prohibited in Vietnam since July 1, 2001, the increasing number of personal vehicles has decreased the quality of urban air. The location of industrial production facilities in or near urban population zones, such as the large number of coal-fired brick kilns which ring Hanoi, also contribute to air pollution problems.

Vietnam currently has a huge requirement for pollution control equipment, technology and services, thus American environmental companies will find numerous opportunities to export their products and services to Vietnam.

For example, due to serious pollution of the canal systems surrounding Ho Chi Minh City, major projects under construction or awaiting approval, or under study are as include:

- Nhieu Loc & Thi Nghe environmental sanitation project, investment capital of \$200 million supported by the World Bank
- Tan Hoa & Lo Gom canal improvement project has investment capital of \$388 million of which 74 percent is funded through international development assistance.
- HCMC Water Environment Improvement program, a \$295 million project.
- Tham Luong & Ben Cat canal project requires a capital investment of \$60million
- The Central Domestic Wastewater Treatment for Can Tho city has investment capital of \$14 million.

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Information relating to environmental projects can be collected by working with the Ministry of Natural Resources and Environment / Division of Environment and the Environmental Protection Agency of every city.

Further information on environmental projects can be obtained from the U.S. Commercial Service in Ho Chi Minh City and Hanoi via the following addresses and website:

- Ms. Ngo Anh, Commercial Specialist
US Commercial Service
US Embassy in Hanoi
Email: ngo.anh@mail.doc.gov
Website: www.buyusa.gov/vietnam
- Ms. Vo Thuy, Commercial Specialist
US Commercial Service
US Consulate General in Ho Chi Minh City
Email: vo.thuy@mail.doc.gov
Website: www.buyusa.gov/vietnam